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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,986

12/09/2003

Soo Young Oh

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EXAMINER

HECKERT, JASON MARK

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

01/18/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/18/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/729,986

Applicant(s)

OH ET AL.

Examiner

Jason Heckert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/22/05, 4/13/04.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 3-4 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear how one would determine the weight constants. The way it is described in the claims and specification, any value could be assigned to the weight constants, resulting in an infinite number of equations. Furthermore, there are two unknown constants, and even if they result in zero (specification line 24), there is a lack of information to allow the calculation both constants.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. in view of Tatsuo et al. in view of Matsuo et al. and further in view of Yoshida et al. Williams et al. disclose a method of detecting laundry in a washing machine wherein the power supply signals are controlled and the motor is rotated to a desirable state (col. 10 lines 46-51) and then removing power from the motor (col. 10 lines 51-53) so that the motor freewheels to a stop. Williams et al. teaches storing information in memory to be compared to look-up tables (col. 5 line 47). Williams et al. does not distinctly state that the target speed is maintained for a predetermined time, but seeing that the target speed is reached, it therefore must be maintained for at least a small order of time, which can be considered a predetermined time. Williams et al. does not disclose measuring and storing PWM values (or signals to the motor) during the speed-up process, but does disclose that this period can be used to in determining mass of the laundry (col. 6 lines 35-40). Tatsuo et al. disclose memorizing PWM signals and using them in fuzzy calculations. These values correspond to values from the initiation of the motor to the discontinuation of the motor. Neither Williams et al. nor Tatsuo et al. disclose measuring the rotational angle, or revolutions, during the freewheeling state. Instead, Williams et al. discloses measuring time, which is directly proportional to the number of revolutions the motor makes during freewheeling. Matsuo et al. disclose including a revolution sensor 6a for detecting the number of revolutions at a predetermined applied voltage. The number of revolutions is used in kinetic energy equations to determine load of laundry. None of the above references teach using average values in calculations. Yoshida et al. disclose using average parameter values

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in load calculations (col. 11 lines 17-23). Furthermore, it is notoriously well known in the art to use average values, as they tend to yield more consistent results. In regards to claims 3-4, one skilled in the art could multiply the measured values by arbitrary constants to get an interpretable result to compare to known data. In regards to claim 8, it is well settled that determination of optimum values of cause effective variables such as PWM cycle is within the skill of one practicing the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). Optimizing the PWM cycle so as to have an efficient motor yet achieve reliable load calculations is within the skill of one practicing the art. It would have been obvious at the time of the invention, to perform not just one known calculation, such as that of calculating kinetic energy, as taught by Williams et al. and Matsuo et al., but perform multiple known calculations by including the teachings of Tatsuo et al in which PWM values are measured. In this manner, one calculation can be used to judge the validity of the other, hence resulting in a more reliable calculation.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Heckert whose telephone number is (571) 272-2702. The examiner can normally be reached on Mon. to Friday, 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH



MICHAEL BARR
SUPERVISORY PATENT EXAMINER